

**ABSTRACT OF THE DISCLOSURE**

An artificial lipid bilayer membrane formation device is disclosed, which includes: an upper solution chamber (first solution chamber) and a lower solution chamber (second solution chamber), both of which are filled with aqueous solution. It further includes a partition wall disposed between the upper solution chamber and the lower solution chamber so as to part the upper and lower solution chambers from each other. The partition wall has an opening, and a first lipid solution is applied to a portion around the opening, thereby forming an artificial lipid bilayer membrane on the opening. Further, in the formation device, a tubule for lipid substitution is attached to the partition wall so as to be positioned on a bulk phase of the artificial lipid bilayer membrane. A second lipid solution is added via the tubule, thereby forming an artificial lipid bilayer membrane whose lipid composition is changed.